

Docket No.: 4670-0126PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Shizuo KITAHARA et al.

Application No.: 10/581,196

Confirmation No.: 2325

Filed: June 1, 2006

Art Unit: 1796

For: OXYGEN ABSORBER

Examiner: R. D. Harlan

**LETTER**

MS IF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Attached please find an Office Action which issued in co-pending application number 12/084,106 mailed from the United States Patent and Trademark Office on March 16, 2010.

All references noted in the Office Action were cited in an Information Disclosure Statement filed on March 12, 2010. Please note that WO 03/082934 corresponds to US 7,144,959.

Applicants request the attached Office Action be incorporated into the above application.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg. No. 43,575, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Dated:

Respectfully submitted,

JUN 09 2010

By 

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Attachments: Office Action in Co-pending Application No. 12/084,106



# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/084,106	07/14/2008	Shizuo Kitahara	5522-0110PUS1	5363
2292	7590	03/16/2010		
BIRCH STEWART KOLASCH & BIRCH			EXAMINER	
PO BOX 747			KRYLOVA, IRINA	
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			03/16/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailto:[mailroom@bskb.com](mailto:mailroom@bskb.com)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	12/084,106	KITAHARA ET AL.	
	Examiner Irina Krylova	Art Unit 1796	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 December 2009.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3,7-9 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3,7-9 and 12-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All
    - b) Some \*
    - c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/04/09</u>  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed by Applicant on December 14, 2009 has been fully considered. The amendment to claims 1-3, 7-9, 12; cancellation of claims 4-6, 10-11 and addition of new claims 17-18 are acknowledged. Specifically, claim 1 was amended to include the limitations of the component (A1) being a cyclized product of conjugated diene polymer, and component (B1) being an ethylene/norbornene copolymer or a hydrogenated product of 3,4-polyisoprene. These limitations were not previously presented and were taken from the original claim 4, now cancelled, and instant specification (see [0105]-[0106] of instant specification). In light of Applicant's amendment filed on December 14, 2009, all previous prior art rejections and a nonstatutory obviousness-type double patenting rejection over a copending application 10/581,196 (published US 2007/0123647), are withdrawn. The new grounds of rejections necessitated by Applicant's amendment filed on December 14, 2009, are set forth below. The following action is properly made final.

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-3, 7-9, 12-13, 17-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No 7,144,959.

The rejection is adequately set forth on pages 5-7 of an Office Action mailed on June 15, 2009 and is incorporated here by reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7-9, 12-13, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kitahara** (WO 03/082934) (**Kitahara'934**). It is noted that while the

rejection is made over WO 03/082934 for date purposes, in order to elucidate the examiner's position the corresponding US equivalent viz. US 7,144,959 is relied upon. All citations to paragraph numbers, etc., below refer to US 7,144,959.

**4. Kitahara'934 discloses a composition comprising:**

- 1) 100 pbw of a hydrocarbon polymer comprising an ethylene-propylene-ethylidene norbornene copolymer (as to instant claims 1-2, cited in col. 14, lines 63-67); or polystyrene (as to instant claims 7-8, cited in col. 6, lines 35-52) and
- 2) 0.1-50 pbw of a modified cyclic structure-containing conjugated diene polymer (col. 6, lines 55-67).

**5. As to instant claim 12, the cyclic structure-containing conjugated diene polymer** comprises a cyclization ratio of 30-95% (col. 15, lines 1-6).

**6. The cyclized conjugated diene polymer is produced by cyclization reaction in the presence of an acid catalyst in a hydrocarbon solvent (col. 4, lines 44-67) and** comprises weight average molecular weight of 10,000-800,000 (col. 2, lines 50-60). The cyclic structure containing conjugated diene polymer comprises a copolymer of styrene and isoprene (col. 2, lines 21-49).

As to instant claims 17-18, the cyclic structure containing conjugated diene polymer may contain an antioxidant (col. 5, lines 62-67). Since **Kitahara'934** teaches that antioxidant "may" be present, therefore, antioxidant component appears to be optional,

and thus will be absent or present in minor amounts (i.e. less than 5,000 ppm, as claimed in the instant invention).

7. Since the polymer components disclosed by **Kitahara '934** are the same as claimed and disclosed in the instant invention, therefore, such properties as a C-H bond dissociation energy and a reaction energy of carbon radical with oxygen of the cyclized conjugated diene polymer and ethylene-norbornene copolymer, and a number of a C-H bonds having the bond dissociation energy of at most 3.70 eV, being at least one per one repetitive unit, would have been expected by a one of an ordinary skill in the art to be inherently present in the polymer components of **Kitahara'934**. "Products of identical chemical composition can not have mutually exclusive properties" (See MPEP 2112.01).

8. The composition may be used for making sheets or bags (col. 8, lines 30-32).

9. Though **Kitahara'934** does not explicitly specify the composition as being an oxygen-absorbing composition, nevertheless, since the composition of **Kitahara '934** is identical to that claimed in the instant invention, therefore, the composition of **Kitahara'934** will intrinsically comprise oxygen absorbing properties as well. "Products of identical chemical composition can not have mutually exclusive properties" (See MPEP 2112.01).

**10.** Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kitahara (WO 03/082934) (Kitahara'934)** in view of **Iwasaki et al (JP-2005230756)** (rejection is based on a machine English translation).

11. The discussion with respect to **Kitahara (WO 03/082934) (Kitahara'934)** set forth in paragraphs 3-9 above, is incorporated here by reference.

12. **Kitahara'934** discloses the sheet comprising the composition fails to specify an oxygen absorbing film and an oxygen-absorbing structure comprising the composition.

13. **Iwasaki et al** discloses an oxygen absorbing composition, film ([0054]) and a multilayer structure ([0057]-[0059]) comprising the following composition:  
1) a cyclic conjugated diene polymer (Abstract, [0023]);  
2) a resin comprising polystyrene ([0038]).

14. **Iwasaki et al** discloses a multilayer structure comprising a film comprising the above mentioned composition and other layers comprising polyethylene, polypropylene, PVC, PETF and other polymers, to further improve oxygen barrier properties ([0057]-[0059]).

15. Since **Iwasaki et al** discloses a composition similar to the composition of **Kitahara'934**, but further specifies the use of the composition for making films and

multilayer structures, therefore, it would have been obvious to a one of ordinary skill in the art to make films, i.e. thin sheets, from the composition of **Kitahara'934** as well.

**16. Claims 7-9, 18** are rejected under 35 U.S.C. 103(a) as obvious over **Iwasaki et al** (JP-2005230756) (rejection is based on a machine English translation).

**17. Iwasaki et al** discloses an oxygen absorbing composition comprising:

- 1) a cyclic conjugated diene polymer (Abstract, [0023]);
- 2) a resin comprising polystyrene ([0038]).

**18. Since the polymer components disclosed by Iwasaki et al are the same as claimed and disclosed in the instant invention, therefore, such properties as a C-H bond dissociation energy and a reaction energy of carbon radical with oxygen of the cyclized conjugated diene polymer and polystyrene, and a number of a C-H bonds having the bond dissociation energy of at most 3.70 eV, being at least one per one repetitive unit, would have been expected by a one of an ordinary skill in the art to be inherently present in the polymer components of Iwasaki et al. "Products of identical chemical composition can not have mutually exclusive properties" (See MPEP 2112.01).**

**19. Though Iwasaki et al fails to specify relative proportions between the cyclic conjugated diene polymer and a polystyrene, however, since Iwasaki et al discloses that the cyclic conjugated diene polymer is distributed within the thermoplastic resin**

comprising polystyrene (claim 8), therefore, it would have been obvious to a one skilled in the art that the relative proportion of the polystyrene resin will be more than 50%, and the relative proportion of the cyclic conjugated diene polymer will be less than 50%.

20. **Iwasaki et al** teaches that as long as the effect of the invention is acquired (i.e. oxygen absorbing properties) an antioxidant may be included ([0047]). Therefore, **Iwasaki et al** recites that antioxidant may or may not be present. If present, the amount of it should be such that “the effect of the invention is acquired”.

#### ***Response to Arguments***

21. Applicant's arguments filed December 14, 2009 have been fully considered. It is noted that in light of Applicant's amendment filed on December 14, 2009, all previous prior art rejections are withdrawn, thus rendering Applicant's arguments moot. The new grounds of rejections necessitated by Applicant's amendment are set forth above. Specifically, see discussion in paragraphs 3-20 above.

22. Regarding the rejection of claims 1-3, 7-9, 12-13, 17-18 under 35 U.S.C. 103(a) as being unpatentable over **Kitahara** (WO 03/082934) (**Kitahara'934**), Applicant argues that

a) **Kitahara'934** discloses the composition comprising copolymers of ethylene/propylene/ethylidene norbornene, wherein the instant claims claim

ethylene/norbornene copolymer; and ethylidene norbornene is completely different from ethylidenenorbornene;

- b) **Kitahara'934** does not teach or suggest an oxygen absorber, wherein addition of an antioxidant in a high concentration should be avoided.
- c) **Kitahara'934** does not teach or suggest polystyrene or hydrogenated product of a ring-opened polymer of norbornene compound.

23. Examiner disagrees.

- 1) Ethylidene norbornene is a derivative of norbornene and thus also belongs to the class of norbornenes. Besides, ethylidene norbornene is cited in the instant specification as a specific example of norbornene used in the instant invention (see p.34, [0060] of instant specification and [0105] of the published application US 2009/0048397).
- 2) Though **Kitahara'934** does not explicitly specify the composition as being an oxiden-absorbing composition, nevertheless, since the composition of **Kitahara '934** is identical to that claimed in the instant invention, therefore, the composition of **Kitahara'934** will intrinsically comprise oxygen absorbing properties as well. "Products of identical chemical composition can not have mutually exclusive properties" (See MPEP 2112.01). Furthermore, since **Kitahara'934** teaches that antioxidant "may" be present in the composition, therefore, antioxidant component appears to be optional, and thus will be absent at all or present in minor amounts (i.e. less than 5,000 ppm, as claimed in the instant invention).

3) As cited above, **Kitahara'934** discloses polystyrene as hydrocarbon component (col. 6, lines 35-45).

24. Regarding the rejection of claims 7-9, 18 under 35 U.S.C. 103(a) as obvious over **Iwasaki et al** (JP-2005230756), Applicant argues that

- a) **Iwasaki et al** discloses an organic compound that has a molecular weight of 3,000 or less. As such, this organic compound cannot possibly be a resin;
- b) **Iwasaki et al** fails to teach a cyclized product of a conjugated diene polymer, and cyclic polymer of **Iwasaki et al** is obtained by polymerizing a low molecular weight diene into a cyclic structure rather than by cyclizing a conjugated diene polymer.

25. Examiner disagrees.

- 1) **Iwasaki et al** recite an organic compound (A) as being a polymer of diene compounds, such as 1,3-conjugated diene compound ([0023]), which may be monocyclic or polycyclic ([0022]) and have a molecular weigh of 3,000 or less ([0019]).
- 2) Thus, the organic compound (A) appears to be a cyclic structure-containing polymer of conjugated diene, having a MW of 3,000 or less. Therefore, the compound (A) is a low molecular polymer.
- 3) The instant claims claim a cyclized product of conjugated diene polymer and do not specify how this product is produced. **Iwasaki et al** discloses a cyclic structure-containing polymer of conjugated diene, also produced from conjugated diene, such as butadiene.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina Krylova whose telephone number is (571)270-7349. The examiner can normally be reached on Monday-Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Irina Krylova/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796

Receipt date: 09/04/2009

12084106 - GAU: 1796

PTO/SB/08a (07-09)

Approved for use through 07/31/2012. OMB 0651-0031  
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Substitute for form 1449/PTO				<b>Complete if Known</b>	
				Application Number	12/084,106-Conf. #5363
				Filing Date	July 14, 2008
				First Named Inventor	Shizuo KITAHARA
				Art Unit	1796
				Examiner Name	I. Krylova
(Use as many sheets as necessary)					
Sheet	1	of	1	Attorney Docket Number	
5522-0110PUS1					

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

**(Use as many sheets as necessary)**

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of

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Attorney Docket Number 5522-0110PLUS1

## **U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> ( if known)			
	AA*	US-2005/0131149-A1	06-16-2005	Kitahara	
	AB*	US-7,144,959-B2	12-05-2006	Kitahara	
	AC*	US-2005/0003220-A1	01-06-2005	Kitahara et al.	
	AD*	US-7,267,887-B2	09-11-2007	Kitahara et al.	
	AE*	US-2006/0063890-A1	03-23-2006	Kitahara et al.	
	AF*	US-7,279,533-B2	10-09-2007	Kitahara et al.	

## **FOREIGN PATENT DOCUMENTS**

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	MM-DD-YYYY		
BA	EP-1 449 643-A1		08-25-2004		
BB	EP-1 489 108-A1		12-22-2004		
BC	EP-1 589 037-A1		10-26-2005		

## **NON PATENT LITERATURE DOCUMENTS**

Examiner Signature	/Irina Krylova/	Date Considered	03/05/2010
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.